Exercise 2

1.
```
SELECT DISTINCT department
FROM students;
```

Department
IT
HR
Finance

2.
```
SELECT department,
    AVG (age) AS avg-age
FROM students
GROUP BY department;
```

department	Avg_age
IT	20.5
HR	22.0
Finance	23.0

3.
```
SELECT department, COUNT (*) AS student_count
FROM students
GROUP BY department
HAVING COUNT (*) > 1
```

department	Student_count
IT	2
HR	2

4.
```
SELECT student_id, name, age, department
FROM students
WHERE age BETWEEN 21 AND 23
```

Student_id	name	age	department
2	Bob	20	HR
3	Charlie	21	IT
4	Diana	23	Finance
5	Eve	22	HR

5. SELECT student_id,
name,
age,
department
FROM students
WHERE (departments IN ('IT','HR')) AND age > 21;

Student_id	name	age	department
2	Bob	22	HR
5	Eve	22	HR

6. SELECT department,
SUM (credits) AS total_credits
FROM courses
GROUP BY department
HAVING SUM (credits) > 5

departments	Total_credits
IT	11

7. SELECT course_id, course_name, department, credits
FROM courses,
WHERE credit <>4

Course_id	Course_name	department	credits
101	SQL Basics	IT	3
104	Excel	Finance	2
105	Statistics	HR	3

8. SELECT course_id,
course_name,
credits
FROM courses
ORDER BY credits DESC
LIMIT 3;

Course_id	Course_name	Credits
102	Python	4
103	Data Science	4
101	SQL Basics	3

9. SELECT MAX(grade) AS max_grade,
MIN(grade) AS min_grade,
AVG(grade) AS avg_grade
FROM enrollments

Max_grade	Min_grade	Avg_grade
90	78	84.6

10. SELECT course_id,
COUNT(*) AS enrollment_count
FROM enrollments
GROUP BY course_id

Course_id	Enrollment_count
101	1
102	1
103	1
104	1
105	1

11.
```
SELECT department,
    SUM (salary) AS total_salary,
    SUM ( bonus) AS total_bonus
FROM salaries
GROUP BY department
```

department	Total_salary	Total_bonus
IT	120 000	10 500
HR	109 000	7 500
Finance	70 000	6 000

12.
```
SELECT department
    AVG(salary) AS avg_salary
FROM salaries
GROUP BY department
HAVING AVG (salary) > 55000
```

department	avg_salary
IT	61 000
Finance	70 000

13. SELECT employee_id, name, salary, bonus,
(salary + bonus) AS total_compensation
FROM salaries
WHERE (salary + bonus) > 60 000

Employee_id	name	salary	bonus	Total_compensation
1	Tom	60 000	5 000	65 000
3	Spike	70 000	6 000	76 000
4	Tyke	62 000	5 500	67 500

14. SELECT department,
SUM (budget) AS total_budget,
AVG (budget) AS avg_budget
FROM projects
GROUP BY department
HAVING AVG (budget) > 70000

department	total_budget	Avg_budget
IT	270 000	135 000
Finance	80 000	80 000

15. SELECT project_id, project_name, department, budget
FROM projects
WHERE budget BETWEEN 50000 AND 120 000
AND department <> 'Marketing';

Project_id	Project_name	department	budget
1	AI App	IT	120000
2	Payroll System	Finance	80 000
5	HR Portal	HR	50 000